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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/924,730	08/08/2001	Paul A. Kline	CRNT-0011	3963

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EXAMINER

PREVIL, DANIEL

ART UNIT	PAPER NUMBER
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2636

DATE MAILED: 04/06/2004

26

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/924,730

Applicant(s)

KLINE, PAUL A.

Examiner

Daniel Previl

Art Unit

2636

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 March 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23,25-32,34,35,38-42,45 and 47-58 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23,25-32,34,35,38-42,45 and 47-58 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \*   c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 19.                      6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

This action is responsive to communication filed on March 15, 2004.

#### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1, 8, 18, 25, and 35, rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claims 1, 8, 18, 25, 35, the limitation "having a voltage greater than one thousand volts" considers as a new matter because it was not described in the specification.

Claims 2-7, 9-17, 19-23, 26-32, 34, 38-42, 45, 47-58 are rejected for the same reason since they depend from rejected claims.

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 4, are rejected under 35 U.S.C. 103(a) as being unpatentable over Roth et al. (US 4,675,648) in view of Steciuk et al. (US 5,387,821).

Regarding claim 1, Roth discloses a method for communicating a data signal over a power line carrying a power signal (col. 1, lines 9-12) comprising: inducing (transformer) an alternating current (AC) from the power signal carried by the power line (AC power line) (col. 3, lines 14-15); powering a transceiver device with the AC voltage (data signals are transferred between transceivers over existing AC power lines) (col. 3, lines 11-13); communicating the data signal with the transceiver device via the power line (data are transferred between transceivers over existing AC power lines) (col. 3, lines 11-42).

Roth discloses every feature of the claimed invention but fails to explicitly disclose a voltage greater than one thousand volts..

However, Steciuk discloses a voltage greater than one thousand volts (abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Steciuk in Roth in order to transfer efficiently data over a power line to residential or commercial buildings wherein the transformer can put the voltage level down to prevent noise or distortion or blowing fuses or throwing circuit breakers for the economical benefice of the users as taught by Steciuk (col. 2, lines 34-49).

Regarding claims 2, 4, Roth discloses the step of transmitting the data signal to an end user communication device via the transceiver device (each of

the transceivers 14 through 20 exchange data to a computer) (col. 3, lines 32-42).

1. Claims 3, 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roth in view of Steciuk and further in view of Abraham (US 6,014,386).

Regarding claims 3, 5, Roth and Steciuk disclose all the limitations in claim 1 but fail to explicitly disclose a fiber optic link.

However, Abraham discloses a fiber optic (col. 3, lines 14-16).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Abraham in Roth and Steciuk. Doing so would deliver accurately clearer signals and fiber optic is less expensive, more convenient and quicker way for inter home or building use.

Regarding claims 6, 7, the above combination discloses all the limitations in claim 1 and Abraham further discloses the step of filtering the induced AC voltage (col. 6, lines 52-67). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Abraham in Roth and Steciuk. Doing so would deliver accurately clearer signals and fiber optic is less expensive, more convenient and quicker way for inter home or building use.

Application/Control Number: 09/924,730

Art Unit: 2636

3. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Roth and Steciuk.

Regarding claim 8, Roth discloses communicating the data signal via a power line (fig. 1); a transformer device having a winding and a core disposed in sufficiently close proximity to the power line to induce and (AC) voltage from the power signal carried by the power line in the winding (col. 3, lines 11-42); powering a transceiver device with the AC voltage (col. 3, lines 11-42) wherein transceiver communicates the data signal through the power line (col. 3, lines 11-42).

Roth discloses every feature of the claimed invention but fails to explicitly disclose a voltage greater than one thousand volts..

However, Steciuk discloses a voltage greater than one thousand volts (abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Steciuk in Roth in order to transfer efficiently data over a power line to residential or commercial buildings wherein the transformer can put the voltage level down to prevent noise or distortion or blowing fuses or throwing circuit breakers for the economical benefice of the users as taught by Steciuk (col. 2, lines 34-49).

2. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Roth in view of Steciuk and further in view of Abraham (US 6,014,386).

Regarding claim 9, Roth and Steciuk disclose all the limitations in claim 8 but fails to explicitly disclose a ferrite member disposed in proximity to the power line for increasing of a section of the power line; and enclosure for housing the ferrite member, the transformer device, and the transceiver device.

However, Abraham discloses a ferrite member disposed in proximity to the power line for increasing of a section of the power line (the transceiver input impedance is optimally match the line impedance about 25% of the source power through the power line) (col. 6, lines 18-45); a ferrite core, transformer device and transceiver device (col. 5, lines 47-55; col. 6, lines 18-39).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Abraham in Roth and Steciuk. Doing so would deliver accurately clearer signals and permit the system to be less expensive, more convenient and quicker for inter home or building use.

3. Claims 10-17, are rejected under 35 U.S.C. 103(a) as being unpatentable over Roth and Steciuk in view of Abraham and further in view of CERN (US 6,452,482).

Regarding claims 10, 14, the above combination discloses all the limitations in claim 8 but fails to explicitly disclose the power line includes a center conductor, an insulator and a second conductor external to the insulator, wherein the transceiver communicates the data signal through the second conductor.

However, CERN discloses a cable 100 includes a center conductor 115, an insulator 120 a second conductor 105 external to the insulator 120 (conductors wrapped around an outer layer of the cable) (fig. 1; col. 4, lines 60-65), wherein the transceiver communicates the data signal through the second conductor (a second winding 235 of coupler 220 is coupled to a port 235 through which data is transmitted and received) (col. 6, lines 14-19).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of CERN in Roth, Steciuk and Abraham. Doing so would deliver accurately clearer signals and permit the system to be less expensive, more convenient and quicker for inter home or building use.

Regarding claim 11, the above combination discloses all the limitations in claim 10 and Abraham further discloses a ground potential (col. 18, lines 1-15).

Regarding claim 12, the above combination discloses all the limitations in claim 10 and Abraham further discloses a current transformer (col. 17, lines 52-64).

Regarding claim 13, the above combination discloses all the limitations in claim 10 and Abraham further discloses fiber optic (col. 3, lines 13-18).

Regarding claim 15, the above combination discloses all the limitations in claim 10 Abraham further discloses AC to DC power (col. 16, lines 28-31).

Regarding claims 16-17, the above combination discloses all the limitations in claim 10 and Abraham further discloses an AC filter (col. 6, lines 52-67).

4. Claims 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over CERN (US 6,452,482) in view of Roth and further in view of Steciuk (US 5,387,821).

Regarding claim 18, CERN discloses the step of removing a portion of the outer insulator of the coaxial power cable (reduce the size of the legs in standard core shapes, winding 630 is wound around a portion of the cores) (fig. 6; col. 9, lines 52-58); coupling communication device to the remove portion of the coaxial power cable where the outer insulator is removed (modem coupled to the cable) (fig. 6).

CERN discloses the limitations above but fails to explicitly disclose inducing voltage from the power signal carried by the center conductor of the coaxial power cable and a voltage greater than one thousand volts.

However, Roth discloses the step of high voltage from the power signal carried by the center conductor of the coaxial power cable (fig. 1) and providing the voltage to power the communication device (col. 3, lines 11-42)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Roth in CERN. Doing so would decrease the noise protection filter and would allow an electrical current to pass without notable attenuation as taught by Roth (col. 1, lines 10-60).

Furthermore, Steciuk discloses a voltage greater than one thousand volts (abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Steciuk in Cern and Roth in order to transfer efficiently data over a power line to residential or commercial buildings wherein the transformer can put the voltage level down to prevent noise or distortion or blowing fuses or throwing circuit breakers for the economical benefice of the users as taught by Steciuk (col. 2, lines 34-49).

Regarding claim 19, CERN discloses an outer conductor at a predetermined distance from the communication device (fig. 1).

Regarding claims 20, 21, CERN discloses the step of selecting the predetermined length to provide an inductance value (fig. 2).

Regarding claim 22, CERN discloses a gap in the outer conductor wherein the communication device is communicatively coupled to the outer conductor on both sides of the gap (fig. 1).

Regarding claim 23, the above combination discloses all the limitations in claim 18 and Roth further discloses the induced voltage is supplied to the communication device via a power supply (abstract).

5. Claims 25-32, 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over CERN in view of Roth and further in view of Steciuk.

Regarding claims 25, CERN disclosing the step of inducing a second voltage from the center conductor 245 (fig. 2; col. 5, lines 60-67;

col. 6, lines 1-50 ); communicating data signal from the outer conductor (data carrying trough conductor 202) (fig. 2; col. 6, lines 21-50).

CERN discloses all the limitations above but fails to explicitly disclose the step of providing power to the transceiver, voltage greater than one thousand volts.

However, Roth discloses the step of providing power to the transceiver (col. 3, lines 11-42).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Roth in CERN. Doing so would allow the power line to communicate with external services with a clearer signal and less expensive, more convenient and quicker for the customers.

Moreover, Steciuk discloses a voltage greater than one thousand volts (abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Steciuk in Cern and Roth in order to transfer efficiently data over a power line to residential or commercial buildings wherein the transformer can put the voltage level down to prevent noise or distortion or blowing fuses or throwing circuit breakers for the economical benefice of the users as taught by Steciuk (col. 2, lines 34-49).

Regarding claims 26-28, CERN discloses an outer conductor is supplied via an access point to the Internet (fig. 1; col. 1, lines 24-26).

Regarding claims 29-30, the above combination discloses all the limitations in claim 25 and Roth further discloses transceiver 14 receive the data signal from and provide the data signal to customer premise and telephone (col. 3, lines 11-42).

Regarding claim 31, CERN discloses the transceiver (transmit and receive) is conductively coupled to the outer conductor to facilitate data communication therethrough ((fig. 1; col. 7, lines 22-26; col. 9, lines 1-7).

Regarding claim 32, the examiner takes the official notice that "direct current voltage" is well known in the art.

Regarding claim 34, CERN discloses a ferrite core (col. 13, lines 58-61).

6. Claims 35, 38-42, 45, 47-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roth in view of Abraham and further in view of Steciuk.

Regarding claims 35, 47, 53, Roth discloses a transceiver 14 in communication with the electric power line, wherein the transceiver is communicatively coupled to the outer conductor to provide communication therethrough (fig. 1; fig. 5; col. 3, lines 11-42; col. 5, lines 7-34). The center conductor induces a second voltage that supplies power to the transceiver (233-kilohertz signal will be induced in a second winding of transformer of power

distribution system) (fig. 1; col. 4, lines 55-65); transceiver 14 is coupled to the outer conductor to facilitate data communications (fig. 1)

Roth discloses all the limitations above but fails to explicitly disclose a power supply that converts the second voltage to a direct current, wherein the direct current is provided to a transceiver, voltage greater than one thousand volts.

However, Abraham discloses a power supply that converts the second voltage to a direct current, wherein the direct current is provided to a transceiver (fig. 15-16; col. 16, lines 25-31).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Abraham in Roth. Doing so would deliver accurately clearer signals and permit the system to be less expensive, more convenient and quicker for inter home or building use.

Furthermore, Steciuk discloses a voltage greater than one thousand volts (abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Steciuk in Roth and Abraham in order to transfer efficiently data over a power line to residential or commercial buildings wherein the transformer can put the voltage level down to prevent noise or distortion or blowing fuses or throwing circuit breakers for the economical benefice of the users as taught by Steciuk (col. 2, lines 34-49).

Regarding claim 38, the above combination discloses all the limitations in claim 35 and Abraham further discloses an outer conductor is supplied via an access point to the Internet (LAN) (col. 16, line 50).

Regarding claim 39, the above combination discloses all the limitations in claim 35 and Abraham further discloses the power line has an insulative cover, a portion of which is removed (fig. 19-21).

Regarding claim 40, the above combination discloses all the limitations in claim 35 and Abraham further discloses the removed portion of the insulative cover exposes the outer conductor (fig. 19-21).

Regarding claim 41, Roth discloses the transceiver receives the data signal from and provides the data signal to a customer premise device (col. 3, lines 11-42).

Regarding claim 42, Roth discloses a computer (col. 3, line 36).

Regarding claim 45, the above combination discloses all the limitations in claim 35 and Abraham further discloses core is disposed around the entire circumference of the power line (fig. 19-21).

Regarding claim 48, the above combination discloses all the limitations in claim 35 and Steciuk further discloses the step of converting the induced AC voltage to direct current voltage (col. 2, lines 37-38).

Regarding claim 49, the above combination discloses all the limitations in claim 35 and Abraham further discloses inducing is accomplished

using a magnetically permeable core disposed substantially around the entire circumference of the power line (fig. 19-fig. 21).

Regarding claim 50, Roth discloses the data signal is wirelessly transmitted (RF) (col. 2, lines 37-41).

Regarding claims 51-52, Roth discloses the transmitted data signal is a radio frequency signal (RF) (col. 2, lines 37-41).

Regarding claim 54, Roth discloses the induced voltage is induced from the current carried by the power line (col. 2, lines 34-36).

Regarding claim 56, the above combination discloses all the limitations in claim 35 and Abraham further discloses inducing is accomplished using a magnetically permeable core disposed substantially around the entire circumference of the power line (fig. 19-fig. 21).

Regarding claim 57, Roth discloses the induced voltage is induced from the current carried by the power line (col. 2, lines 34-36).

Regarding claim 58, Roth discloses the induced voltage is induced from the current carried by the center conductor (fig. 1).

### ***Response to Arguments***

7. Applicant's arguments with respect to claim 1-23, 25-35, 38-42, 45, 47-58 have been considered but are moot in view of the new ground(s) of rejection.

According to Applicant's argument on page 9 "passive coupler does not use a power source". The examiner respectfully disagrees with the Applicant because a

Application/Control Number: 09/924,730  
Art Unit: 2636

passive coupler does use a power source. A coupler is a passive device, whose role is to separate or combine one signal from the main line to another. There are two types of couplers directional and hybrid. A passive coupler used a reduced power to operate contrary to the active coupler. Roth discloses transceivers that transmit and receive data signals are coupled to different power distribution system to operate equipment (col. 1, lines 61-67). It is clear that the transceivers of Roth power from the power line 2.

The rejection is proper.

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sanderson (US 6,040,759) discloses a communication system for providing broadband data services using a high-voltage cable of a power system.

Enge (US 3,605,009) disclosed a stabilized power supply.

Mansfield, Jr. et al. discloses an highly reliable power line communications system.

Morava (US 5,616,969) discloses a power distribution system having substantially zero electromagnetic field radiation.

Merwin et al. (US 5,691,691) discloses a power line communication system using pulse transmission on the AC line.

Application/Control Number: 09/924,730  
Art Unit: 2636

Sutterlin et al. (US 5,148,144) discloses a data communication network providing power and message information.

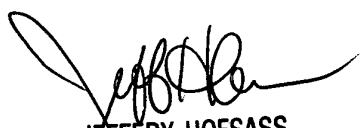
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Previl whose telephone number is 703 305-1028. The examiner can normally be reached on Monday-Thursday. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Hofsass can be reached on 703 305 4717. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872-9314 for regular communications and 703 872-9315 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 305-4700.

Daniel Previl  
Examiner  
Art Unit 2632

DP  
April 1, 2004

  
JEFFERY HOFSSASS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600